BANK OF ENGLAND

Latest thinking on using APIs to enhance how users interact with the renewed Real-Time Gross Settlement (RTGS) Service

Following an industry-wide consultation, the Bank of England ("the Bank") announced in May 2017 that it would renew the Real-Time Gross Settlement (RTGS) service. This is a critical piece of national infrastructure delivering final and risk-free settlement for the UK's high value and time critical payments. The new RTGS service will deliver a range of new features and capabilities, including increased resilience, greater access, wider interoperability, improved user functionality and strengthened end-to-end risk management.

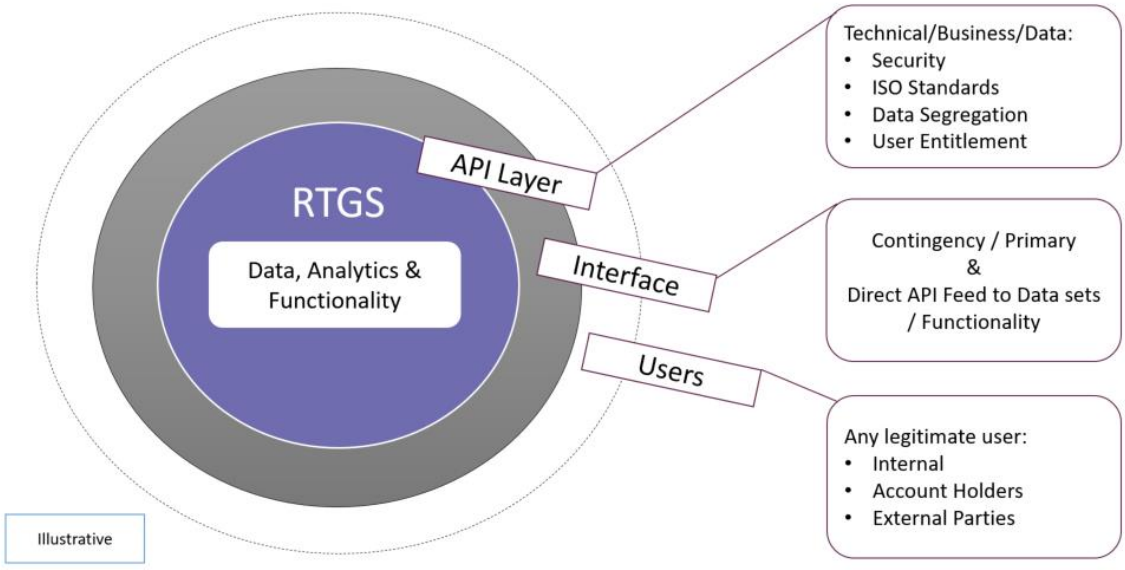
The Bank has identified opportunities to improve the current offering for how RTGS users interact with the RTGS system. As part of the renewed service the Bank committed to providing an exposed API (Application Programming Interface) to allow external participants to develop sophisticated and automated real-time tools for accessing RTGS transactional and liquidity data. In addition to this, the Bank committed to look at whether other functionality could benefit from being enabled by APIs.

What does it mean and why is it important?

The Bank's RTGS system holds a lot of data, from transactional and liquidity data to account management information. The system also allows for many different functions to be undertaken on accounts, such as requesting defunds or updating contact information. Today, the way firms access this data and execute actions on the ledger or specific accounts is fragmented and inefficient. New technologies such as APIs provide an opportunity for efficient access to more enhanced data, which would promote interoperability, support cost efficiency, and enhance bespoke functionality.

An API is a set of functions and procedures allowing the creation of applications that access the functions or data of an operating system. The Bank could make available APIs (exposed as products / facilities, an "exposed API") as a means for allowing appropriate parties to gain access to specific RTGS data and functionality. These parties could be RTGS account holders, but could also be any legitimate party – such as a synchronisation operator – that needed access to the data, with the right controls.

Illustrative: What the API Ecosystem could look like



17th June 2019

For example, financial institutions which have accounts in RTGS need to receive data, both real time and historic operational data on current balances and flows, to enable them to manage risks, their payments, forecast liquidity usage, and reconcile their RTGS flows with their internal records etc. Exposing such RTGS data via APIs will improve current business processes, and that with the right controls, said institutions could build bespoke interfaces.

Our Engagement

The policy decisions around exposing APIs and the technical and business implications of operating API facilities are new to the Bank. The Bank has never operated a facility of this kind. It is therefore currently in an exploratory phase, which has included extensive engagement across stakeholders.

The Bank's engagement to date has been to explore the foundations of an API approach as part of its API strategy. This has included work to understand:

- **Personas:** What appetite for an API approach exists across what different RTGS user types?
- **Use Cases / business functions:** What functionality would benefit from being enabled via an API product?
- **Working Models:** How will users interact with RTGS data today vs. in 20 years' time?
- **Technical/Business Considerations:** Should an API and its data use international standards? How to ensure wider interoperability, if any?
- **Governance:** How should a future API ecosystem be governed?

In January and February 2019, the Bank held two workshops with current and prospective users of the RTGS system to seek their input to our approach. There were 32 attendees representing a diverse mix of firms; primarily CHAPS participants, but also indirect participants, and Reserves Accounts holders. The Bank has also engaged bilaterally with API experts outside of financial services - especially those with experience in operating API facilities.

The Bank has also engaged in international discussions on API best practice. This included work through the UK's ISO membership – working with UK, China and Singapore - under the ISO governance to develop a Technical Specification for APIs in financial services. The Bank is also involved in ongoing discussions about how the International Standard ISO 20022 should accommodate APIs (with the JSON syntax) in the future.

The Bank has also spoken with other central banks and settlement service operators on their use of APIs, with a view that international collaboration to define API market practice would provide benefits for interoperability.

What has the Bank learnt so far?

The Bank is at an early stage in its thinking on its API approach. However, it is clear that there is an opportunity to realise tangible benefits from a seamless and more efficient interaction between the RTGS system and its users.

Industry feedback

There is a strong appetite for interacting with data directly on the RTGS system through a facility, such as an exposed API. In this vein, many have indicated they would benefit from the opportunity to integrate RTGS information flows directly with the users' back office or using the APIs exposed to build bespoke interfaces.

The Bank should provide an interface that provides at least critical functionality, for users with limited interactions with the RTGS system and for contingency purposes. Many stakeholders have highlighted that liquidity management and monitoring tools are a key use case for APIs (such as richer data and functionality provided on liquidity).

API governance - user entitlement, permissions, maintenance cycles, change management cycles - are crucial considerations for usability and integrity / security. International alignment would be very beneficial, especially for the larger more internationally facing participants. This would be useful in particular for data standardisation - such as the use of ISO 20022 in an API.

Our initial observations

Engagement suggests that everything that could be done by an API should be, eventually, providing there is tangible benefit and the right governance and processes are in place. To this extent, the Bank does not think that policy discussions should be driven by specific use cases, but rather an overall commitment to providing user-driven access to data and to answer to various types of information flows in an optimal way. The Bank understands that implementing the right governance does not have to be a "big bang" and should evolve in response to user needs.

There could be other users, like government agencies or non-operational parts of the Bank, accessing data outside the current users the Bank typically think of today, providing the right governance is in place. For example, the Bank currently undertakes analysis of CHAPS volumes and values and publishes it on its website; this is something the Bank could automate in the future, with the right controls.

Next Steps

The Bank will continue to engage with stakeholders and experts. By the end of 2019 the Bank expects to announce next steps of our API approach, including further engagement, and how the Bank intends to progress this across the life of the RTGS Renewal Programme.